***Statewide Standard Treatment Protocol***

# *Basic Life Support Standing Orders*

## *For Nerve Agent Antidote Program*



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# *State of Delaware*
# *Department of Health and Social Services*
# *Division of Public Health*
# *Office of Emergency Medical Services,*

*In conjunction with the*

## *State Fire Prevention Commission*

## *Statewide Standard Treatment Protocols and Basic Life Support Standing Orders*

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**Purpose:**
To outline the process by which Basic Life Support agencies may train, acquire, maintain, use, and discard of MARK I kits. The decision to participate in the MARK I kit program is on a voluntary basis however; those agencies wishing to participate must comply with the protocol.

**Justification:**
During an act of chemical terrorism or during a hazardous materials incident, basic life support providers may be exposed to harmful, even fatal doses of nerve agent. In these situations, providers may need to administer life saving medications via single dose self-administration kits, to themselves or fellow providers in a rapid time sensitive fashion.

**Protocol:**
1. Participation in this program is voluntary. Once the agency receives the MARK I kits, their usage must only be under the direction of this protocol, and compliance is mandatory.
2. Any Basic Life Support agency wishing to participate must notify OEMS in writing of their interest. The agency must outline how it plans to distribute, maintain and monitor the MARK I kits. This includes a plan for QA/QI on their usage and disposal.
3. Upon the approval of the agency by OEMS, the agency must undergo a training module, offered by OEMS, on the maintenance and appropriate use of the MARK I kit.
4. The OEMS will issue the MARK I kits to the agency based on the needs of the agency.
5. The agency is expected to keep the kits current and in good condition. Broken or expired kits are to be returned to OEMS for replacement.
6. Any usage of a MARK I kit must be reported to the OEMS or county medical director within 24 hours.
7. An agency may discontinue the usage of MARK I kits at any time by returning them to OEMS.
8. Failure to comply with the protocols or maintain the kits in working order may result in discontinuation of the agency in the program.

## Nerve Agents

**Background:**
Nerve agents are the most toxic of the known chemical agents. They are hazards in their liquid and vapor states and can cause death within minutes after exposure. Nerve agents inhibit acetylcholinesterase in tissue, and their effects are caused by the resulting excess acetylcholine. Nerve agents are considered to be major military and terrorist threats. Common names for nerve agents include Tabun (GA), Sarin (GB), and Soman (GD), GF and VX. Nerve agents are liquids under normal temperature conditions. When dispersed, the most volatile ones constitute both a vapor and liquid hazard.

**Suspicion/Detection:**

- Multiple patients with miosis, rhinorrhea, difficulty breathing, convulsions, drooling or paralysis.
- May smell odor of fruit or fish but this is highly unreliable.
- Personnel are to extricate themselves immediately from the area and initiate personal protection and care if needed.
- With suspicion of nerve agent, notify the communications center immediately and contact medical control as soon as possible.

**History:**

- Setting
- Exposure length and type
- Concentration of agent

**Exam:**

- ABCs
- Vital Signs
- Level of Consciousness
- Vapor
    - Small exposure: Miosis, rhinorrhea, and mild difficulty in breathing.
    - Large Exposure: loss of consciousness, convulsions, apnea, flaccid paralysis, copious secretions, miosis.
- Liquid
    - Small to moderate exposure: localized sweating, nausea, vomiting, feelings of weakness
    - Large Exposure: Sudden loss of consciousness, convulsions, apnea, flaccid paralysis, copious secretions.

**Triage:**

- Immediate (Red): severe exposure including respiratory distress, cyanosis, muscular fasciculations, unconscious with pulse and blood pressure.
- Non-salvageable (Black): no obtainable blood pressure
- Delayed (Yellow): walking and talking, may still require self-administration of mark I kit.

**Self-treatment:**

- Protection with appropriate Personal Protective Clothing for vapor and liquid.
- Provider:
    - Administer MARK I kit (Atropine and Pralidoxime) immediately with any symptoms. If provider has mild symptoms of miosis or rhinorrhea, self-administer one Mark I kit and retreat. If symptoms continue or do not improve, seek evaluation from another EMS provider.
    - If on further evaluation, the provider is found to have more than mild symptoms, see below.

- **General Guidelines:**
    - **Mild** (miosis and rhinorrhea) Give one MARK I kit. Seek ALS for further evaluation.
    - **Moderate** (above plus mild respiratory symptoms) Give 2 MARK I kits. Seek immediate ALS for further evaluation and treatment.
    - **Severe** (respiratory distress, cyanosis, unconscious with pulse and BP, fasciculations) Give 3 MARK I kits, and maintain airway with bag-valve-mask (BVM) and suction as needed. If available, administer 10 mg Valium via Autoinjector. Seek immediate ALS for further treatment and assistance with airway management and breathing support.
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- Decontamination of skin is not necessary with vapor exposure but remove all clothing to remove trapped vapors.
- Decontamination of skin exposure: Hypochlorite and large amounts of water. Patients will require observation for toxicity for at least three hours after decontamination.

**Treatment of the Public:**

- Agencies authorized to carry Mark I kits for self-protection can provide aid to the public when authorized by an on-line Medical Control physician via radio contact.
- Providers will be given a laminated wallet sized card with signs and symptoms of nerve agent exposure for rapid reference and the appropriate treatment of varying levels of severity.
    - Signs and symptoms will be communicated to the on-line physician by the on-scene providers.
    - The on-line Medical Control physician will authorize the use of Mark I kits (if appropriate).
    - The kits will be obtained from existing supplies or supplemental supplies, which can be released in mass casualty situations.
- Existing protocols for self-treatment of providers will be followed when treating adult patients with suspected exposure
    - The number of Mark I kits utilized will be the same as in the self-treatment protocol.
- Pediatric patients (less than or equal to age 12) will be treated using pediatric Mark I kits (if available)
    - The number of pediatric Mark I kits utilized will be identical to the number recommended for an adult with corresponding symptoms however, these kits contain a lower dosage of medication.
    - In the event pediatric Mark I kits are not available, patients with severe symptoms should be given one adult Mark I kit. Those with mild or moderate symptoms should be evacuated and an alternative method to deliver medication should be attempted.